but these changes are now most needlessly made on the slightest pretext entirely overlooking that every new name given to an old plant is in so far an additional impediment not an aid to its study. I have entered into a few details on some points of Nomenclature in a paper on Euphorbiaceæ printed for the Linnean Journal of which I ought to have had my separate copies but need but suppose Christmas is blocking the way but I will send you a copy by first as soon as they come in

Terminology again or the names of organs is a mere element in the language of Phytography - not a science in itself and clearness definiteness and facility for use are here the objects to be attained where practicable, but the organs of plants are in many instances subject to such complicated variations that we can give only very general and comprehensive ~~general~~ substantive names suiting them to special purposes by the addition

25. WILTON PLACE.
London S.W.
Dec 23/70

My dear Gray

I thank you most heartily for your friendly letter received this morning and most cordially wish you and Mrs Gray a happy new year and many many more of them sincerely hoping that before another comes round you may both be induced to cross the Atlantic and I may once more have the pleasure of shaking hands with you

Thank you about Herpetocneste Liddelli work is so good that I follow him implicitly & here I see no good reason for departing from his views, Bureau is not to much to be depended on in Monoe - I do not mean for accuracy - but for generic views - he is apt to put species into wrong genera and to multiply genera upon trifling characters - on the other hand sometimes to amalgamate

species too much — Dictocarpeæ have given me a great deal of trouble. Of a large portion of the species on which genera have been made only one sex is known — and this very often be a very imperfectly described sex.

In regard to Nomenclature Terminology Taxonomy and Phytography it appears to me that there has been of late years a growing tendency to treat them as the end not as the means of study. The end of Botany is the study of the history, development, physiology, structure affinities and natural products of plants. Taxonomy and Phytography, place on record the results of these studies as a basis for future investigation and their excellence depends in the case of Taxonomy on a due appreciation of affinities as in that of Phytography it is a great measure on style including lucidity and arrangement of details. Nomenclature and Terminology however, which some now regard as so important a branch of botany are after all but a subordinate branch of Phytography of which the value is as it were purely mechanical. Every plant or group of plants must have a name and ought to have but one name. In the case of higher groups a single worded name suffices (substantive for genera adjective for orders &c) in the lower groups species of Linnæus's admirable system has established the two-worded name a substantive & adjective combined, and the sole object of the science if it may be so called of Nomenclature is to give these names such certainty and permanency as may render them most efficient in facilitating the study of the plants. The framing new names for new plants requires therefore strict observance of definite rules but great forbearance is as necessary in the changing of established names. The priority of a name is the first requisite to appropriately comes next. The progress of science does indeed require too frequently some change in old names

from the examination of recent plants, it would be a great convenience if one common name could be agreed upon for the ~~appendages~~ external appendages about the leaves and flowers known under the various names of axillary foliaceous stipules accessory &c according to their ascertained or supposed origin. As this origin can often not be ascertained without careful organogenetic researches which when once made are able to verify by repeated observations it has given rise to much controversy as to which of the names is applicable in particular occasions and as it is necessary to speak of these appendages for description purposes one is at a loss what name to give them without begging the question which one has no means of deciding.

Besides my paper on Euphorbiaceae I hoped to have sent you by this time the new part of Bot. Ic. which is at the binders & ought to have been here last week.

I say nothing at present as to taxonomy and the general form of Phytography I have on so many occasions published my ideas on the subject but if anything occurs to me I will write again — all that I say is subject of course to your own views which I always duly appreciate.

Yours very sincerely
Geo. Bentham

of an adjective or periphrase. The numerous attempts to give special substantive names to minor modifications of organs exemplified in a limited number of plants have only resulted in overloading our text books with names either ignored in practical phytography or if made use of entail upon the reader the additional trouble of turning to his text books to know what they mean. Names of organs are defined or limited upon two principles depending 1st upon their apparent form and structure 2d upon their origin and position with relation to other organs. The most useful are those which are coextensive in both respects but this is not always the case, and though the first condition can generally be practically verified the second is sometimes more or less theoretical. Nothing can be more useful in phytography than the several names bud-scales (at the base of the year-branch) leaves (fully developed and readily bearing leaf-buds or branches in their axils) bracts (reduced leaves subtending the branches of the inflorescence or the flowers of simple inflorescences) and bracteoles

subtending individual flowers in compound inflorescences) whenever (as usual) there are clearly distinguishable but the scalelike and fully developed form do not always coincide with perianth we have leafy scales undeveloped leaves floral leaves and leaflike bracts etc which we must thus distinguish otherwise to the general though sometimes too indefinite terminology Scales leaves bracts & bracteoles

In fruits the differences between the theoretical and practical definitions has produced a great and to my mind unfortunate confusion of names. The fruit often changes so very much in its growth from the ovary that its original structure is often very difficult to trace from its examination when ripe and yet it is essential to describe and speak of it in that state: the different forms it assumes are so strikingly different from each other that it is a great assistance in phytography to have distinct substantive names for the principal ones the capsule the follicle the berry the drupe the utricle the nut etc and a few others are the most useful of these names and should be defined strictly according to their correlations definitions etc independently of their origin Sometimes also names dependent determinable in the ripe state on origin are useful as being well established and leading to simplify descriptions such as the legume of Leguminosæ or the silique or silicle of Cruciferæ and the legume may be more or less follicular or dehiscence or utricular or achenioid still it retains the character of the order which can be verified in the ripe state but it helps nothing to lucidity and accuracy of description to call the fruit of a Dryonia or of a Momordica a pepo or that of a Hawthorn a pome and accordingly we only find these names in text books or in pedantic descriptions which require the use of a special glossary to comprehend them Still less does it advance science to give distinct substantive names to the inferior or superior berry — & the 1- or more- celled or pyrened drupe etc: We never give different substantive names to the correspondingly different ovaries and yet it is in the ovary state that these differences require the closest attention on the part of the scientific observer There is great difficulty in the terminology of some parts of the seed essential differences depending in many cases on origin which cannot always be safely deduced